

#### 4.6-4.9 test review answers

1. -3

2.  $\frac{1}{3}$

3.  $\frac{2}{5}$

4.  $-\frac{21}{4}$

5. The average rate of change between 2002 to 2009 was an annual gas price increase of \$0.14 per year.

6.  $(0, 1\frac{1}{2} \text{ meters})$

7.  $[0, 3.203 \text{ seconds}]$

8.  $(0, 8 \text{ feet})$

9.  $(-0.3, 1.9), (-2.2, 7.5), (1.5, -3.4)$

10.  $x = -1, 4$

11.  $x = 0, -\frac{7}{2}$

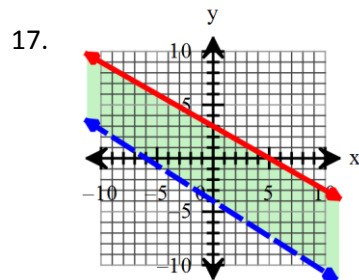
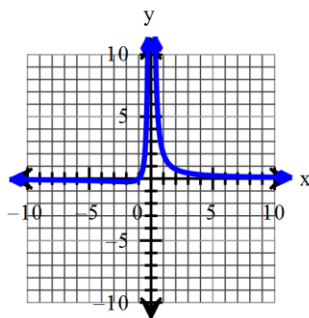
12.  $x = [-3, 2]$

13.  $x = (-6, 1) \cup (6, \infty)$

14.  $g = \frac{4\pi^2}{T^2}$

15.  $c = \frac{k^2 - b^2}{-4a}$

16.  $y = \frac{x+1}{x^2}$



18a.  $h(x) = 2x - 3 + \sqrt{x - 1}$ , Domain:  $[1, \infty)$

18b.  $h(x) = 2x - 3 - \sqrt{x - 1}$ , Domain:  $[1, \infty)$

18c.  $h(x) = (2x - 3)\sqrt{x - 1}$ , Domain:  $[1, \infty)$

18d.  $h(x) = \frac{2x-3}{\sqrt{x-1}}$ , Domain:  $(1, \infty)$

18e.  $h(x) = 2\sqrt{x - 1} - 3$ , Domain:  $[1, \infty)$

18f.  $h(x) = \sqrt{2x - 4}$ , Domain:  $[2, \infty)$

19. -14

20. 4

21.  $\frac{1}{4}$

22.  $\frac{1}{2}$

23. 14

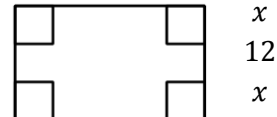
24.  $\frac{1}{3}$

25. -3

26. 4

27.  $\frac{1}{2}$

28a.  $x \quad 20 \quad x$



28b.  $V = (20 - 2x)(12 - 2x)(x)$

28c.  $(0, 6 \text{ inches})$

28d. 180 cubic inches

28e. Max Volume: 262.7 cubic inches

Length: 15.2 inches

Width: 7.2 inches

Height: 2.4 inches

| Term | Value          |
|------|----------------|
| 1    | 2              |
| 2    | $\frac{3}{4}$  |
| 3    | $\frac{4}{9}$  |
| 4    | $\frac{5}{16}$ |